Influence of dried Bacillus substillis and lactobacilli cultures on intestinal microflora and performance in broilers

ABSTRACT

Two hundred 10-day-lid, male Arbor Acres broiler chicks divided randomly into 4 groups of 50 chicks each were used. Different feeding treatment was carried out for each group. Chicks in treatment 1 were fed a basal diet(Starter feed)(control); treatment 2, a basal diet + 0.1% B. subtilis culture; treatment 3, a basal diet + 0.2% lactobacilli culture in the feed; and treatment 4, a basal diet +5 g lactobacilli in the drinking water. The viable bacterial counts for each treatment were approximately 109 cells/kg feed. The weight gain in chickens given feeds incorporated with B. subtilis and lactobacilli was significantly($p<0.05$) higher than those of the control. With regard to feed efficiency, there was a definite tendency towards a higher feed : gain lower($p<0.05$) feed : gain ratio. A significantly($p<0.05$) larger population of Lactobacillus was found in the small intestine of chickens fed with feed incorporated with B. subtilis at 21 and 28 days and with lactobacilli at 14, 21 and 28 days. Populations of intestinal E. coli in broilers given feed added with B. subtilis were not significantly($p<0.05$) different from those of the control, but in chickens fed lactobacilli-added feed, their populations wee significantly lower($p<0.05$) at 14 and 21 days. No significant differences were found among the treatments and the control in the occurrence of Salmonella and Campylobacter during the whole experimental period.

Keyword: B. subtilis; Broiler; Lactobacillus; Pathogenic bacteria; Performance; Probiotic